

BRACONID WASPS REARED FROM LEPIDOPTEROUS
LARVAE IN ARIZONA, 1957¹

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During 1957, approximately 12,000 lepidopterous larvae from crop areas in southern Arizona were reared to determine the numbers and kinds of insect parasites present. Individual larvae were collected from cotton, alfalfa, corn and sorghum, held in ½-pint waxed paper cups with transparent plastic lids and fed fresh alfalfa. The tachinid flies which emerged have been discussed by Butler (1958). This paper treats the braconid wasps.

Ten species and 55 individual rearings were obtained. These represent three subfamilies: Microgasterinae with four species of *Apanteles* and three of *Microplitis*, Cheloninae with a single species, *Chelonus texanus* Cresson, and Rogadinae, with two species of *Rogas*. The ten species are discussed below. Under each species there is a summary of the rearings and also of the adult records in the University of Arizona Collection, most of which were from a state-wide survey of the insects associated with crops, as described by Butler and Werner (1957) and Werner and Butler (1958). Two hundred and fifty adult records are included. Numbers in parenthesis in the text represent numbers of separate collections, not of specimens. All of the specimens, from rearings and survey, have been determined by C. F. W. Muesebeck. The author wishes to take this opportunity to thank Mr. Muesebeck for his kind assistance.

Apanteles marginiventris (Cresson).—A single specimen was reared from *Laphygma exigua* (Hübner) on cotton from Higley. Adult collection records indicate that this species is most abundant in Yuma (6) and Maricopa (11) Counties but there are single records from Santa Cruz and Gila Counties. Adults were swept from alfalfa (14), cotton (2), and Bermuda grass (1) during January (1), February (1), April (1), July (5), August (4), September (1) and November (6).

Apanteles medicaginis Muesebeck.—Ten rearings were made from *Colias philodice eurytheme* Boisduval. *A. medicaginis* is widely distributed throughout Arizona and it has been collected during the following months: January (2), June (5), July (2),

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August (16), September (8), October (4), November (13) and December (1).

Apanteles militaris (Walsh).—Two rearing records were obtained for this parasite, one from *Laphygma exigua*, swept from alfalfa at Sahuarita in July, and the other from an unidentified dead caterpillar found on corn at Pearce in August. Twelve adult records were obtained from alfalfa. This species is generally distributed throughout southern Arizona and was collected during the following months: January (1), February (1), April (3), May (1), June (2), July (3), August (1) and November (2).

Apanteles sp., possibly new.—A single specimen was reared from *Trichoplusia ni* (Hübner) from cotton southeast of Willcox in August.

Microplitis alaskensis Ashmead.—Four rearing records were obtained from *Trichoplusia ni* from cotton (2), alfalfa (1) and lettuce (1). Three adults were swept from alfalfa. Except for one collection from Navajo County, all collections were made in Cochise County. This species was taken in the summer, as follows: July (2), August (4), September (1) and November (1).

Microplitis brassicae Muesebeck.—Four rearing records were also obtained for this species from *Trichoplusia ni* but all from cotton. Two adults were swept from cotton and one from alfalfa. Adults were collected from Maricopa (4), Pima (1), Cochise (1) and Mohave (1) Counties in April (1), June (1), July (3) and August (2).

Microplitis croceipes (Cresson) is an important parasite of *Heliothis* spp. and 18 rearings were made from alfalfa (9), sorghum (6), cotton (2) and weeds (1). Collections of adults were from alfalfa (14), cotton (3), corn (1) and *Lepidium* (1). Adults were collected only in the central and south-eastern part of the state, during June (3), July (17), August (23), September (1) and October (1).

Chelonus texanus Cresson had the widest host range of the braconids reared. It was obtained from *Laphygma exigua* (7), *L. frugiperda* (J. E. Smith) (4), *Heliothis* sp. (1) and *Prodenia ornithogalli* Gueneé (1) on alfalfa (7), corn (4), cotton (1) and Swiss chard (1). Adults were swept from alfalfa (94), cotton (11) and Bermuda grass (2). *C. texanus* is very common in crop areas and was collected in every county and throughout the year except

during the winter. Monthly records are: March (2), April (2), May (6), June (19), July (43), August (27), September (21), October (6) and November (14).

Rogas molestus Cresson.—A single specimen of this species was reared from *Trichoplusia ni* on alfalfa at Amado in August.

Rogas perplexus Gahan.—Two rearings were obtained, one from *Trichoplusia ni* on alfalfa at Elfrida in July and the other from *Heliothis* sp. on cotton at Safford in August.

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THE PARASITES OF THE CLOVER SEED CHALCID IN THE UNITED STATES¹

(Hymenoptera:Chalcidoidea)

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The clover seed chalcid, *Bruchophagus gibbus* (Boheman), annually causes serious losses to alfalfa and clover seeds throughout the United States. Its destructiveness is reduced by a number of chalcidoid parasites. This paper presents a key for the identification of the clover seed chalcid and its parasites and a brief summary of their areas of recorded occurrence and important sources of published information. The key and figures were prepared by B. D. Burks⁴ and the distribution records are from Muesebeck *et al.* (1951) and Hansen (1955).

The following key to the clover seed chalcid and its parasites in the United States was prepared by Dr. B. D. Burks. This key was based on dry female specimens reared from alfalfa, clover or other

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